

NOVEMBER/DECEMBER 2024

**23PECH33B — BIOMOLECULES AND
HETEROCYCLIC COMPOUNDS
(Elective V)**

Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is glycolysis?
2. What is the anomeric effect?
3. Write a structure of estrogen and cortisone.
4. What are non-steroidal hormones?
5. Define transamination.
6. What is Dialysis?
7. Define Nucleic acids.
8. Draw the structure of the Nucleotide.
9. Write any two preparations in benzothiophene.
10. Write the electrophilic substitution of Indole.

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Explain the physical and chemical properties of glucose.

Or

- (b) Discuss the physical and chemical properties of lactose.

12. (a) What is Hormone? Explain to anyone in detail.

Or

- (b) What is cholesterol? Explain.

13. (a) Explain the Biosynthesis of protein.

Or

- (b) What is the role of nucleic acid? Explain.

14. (a) Explain the Watson-Crick model.

Or

- (b) What is the difference between DNA and RNA? Explain.

15. (a) Discuss the preparation and reactions of Isoindole.

Or

- (b) Explain the reaction and mechanism of Quinoline.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. (a) Explain any two polysaccharides. (4+4)

- (b) Write the chemical properties of Mannose. (2)

17. (a) Discuss the biosynthesis of cholesterol from squalene. (7)

- (b) Discuss the functions of androgen. (3)

18. (a) What is metabolism? (2)

- (b) Discuss the catabolism of amino acids. (8)

19. (a) Explain the structure and synthesis of Nucleic acids. (7)

- (b) How will you convert nucleoside into nucleotide? (3)

20. (a) Discuss the reaction and mechanism of benzofuran. (5)

- (b) Explain the reaction and mechanism of Isoquinoline. (5)